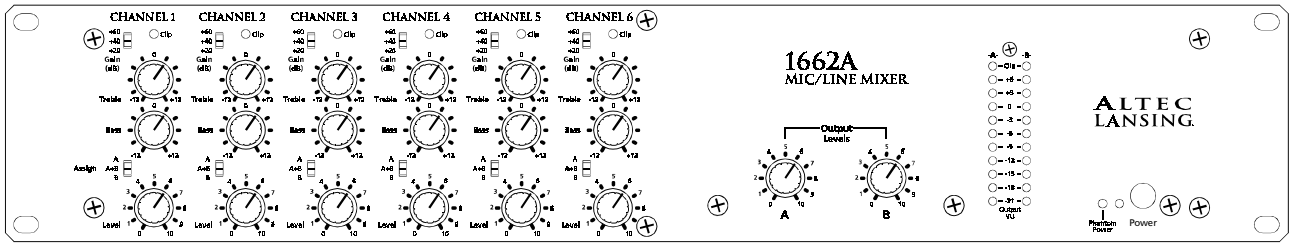
ALTEC LANSING®

PROFESSIONAL

1662A

MIC/LINE MIXER



Altec Lansing Professional
1000 W. Wilshire Blvd. Suite 362
Oklahoma City, OK 73116 USA
A division of Altec Lansing Technologies Inc, Milford PA 18337-0277 Made In USA

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1. INTRODUCTION

Congratulations on your purchase of an Altec Lansing 1662A mic/line mixer, a professional, studio quality solution to everday mixing needs. The 1662A features six mic/line inputs with mic input pad, TRS insert points, and +48V phantom power. Each channel has up to 60dB input gain, separate treble and bass controls, level, and an output channel assign switch for sending any channel to either or both outputs. Stereo sum inputs are provided for adding typical program audio sources from DVD, CD, tape, etc. A full 11 segment LED array indicates stereo output level.

Mic/line inputs and main outputs use Euroblock connectors, allowing bare wire to be easily connected to the mixer without soldering. The 1662A mixer uses professional quality 16mm metal shaft potentiometers for greater accuracy and long life.

2. UNPACKING

As a part of our system of quality control, every Altec Lansing product is carefully inspected before leaving the factory to ensure flawless appearance. After unpacking, please inspect for any physical damage. Save the shipping carton and all packing materials , as they were carefully designed to reduce to minimum the possibility of transportation damage should the unit again require packing and shipping. In the event that damage has occurred, immediately notify your dealer so that a written claim to cover the damages can be initiated.

The right to any claim against a public carrier can be forfeited if the carrier is not notified promptly and if the shipping carton and packing materials are not available for inspection by the carrier. Save all packing materials until the claim has been settled.

3. AC POWER REQUIREMENTS

The 1662A mixer will perform normally from 93 to 125 volts AC, 50-60Hz (some export models are wired for 240 Volts and are labeled accordingly). Use only properly grounded AC receptacles. To reduce the risk of ground loop hum, use a central point for system AC power distribution. In the event of an internal fuse failure, refer this unit to a qualified service technician for fuse replacement using only the same type fuse, 0.5A Bussman AGC-1/2 or equivalent. Power consumption is less than 20 watts.

The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

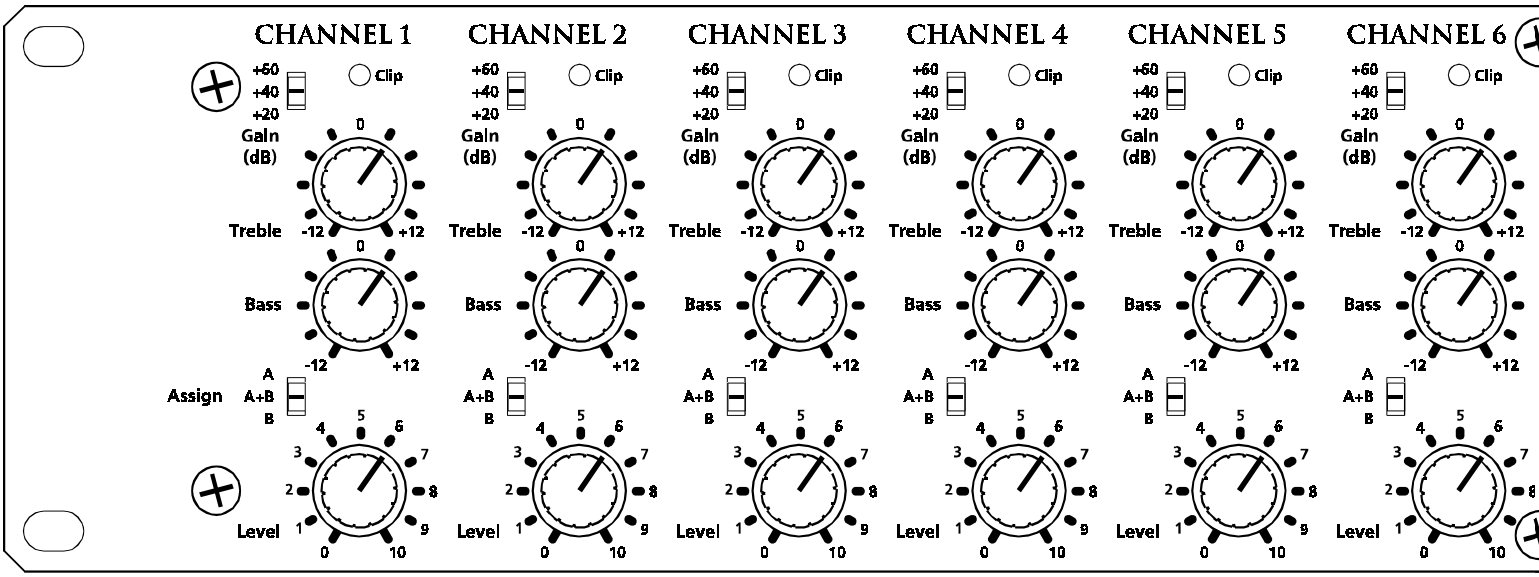
TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER. NO USER SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

TO REDUCE THE RISK OF FIRE OR ELECTRICAL SHOCK, DO NOT EXPOSE THIS APPlIANCE TO RAIN OR MOISTURE.

TO REDUCE THE RISK OF FIRE, REPLACE ONLY WITH SAME TYPE FUSE. REFER REPLACEMENT TO QUALIFIED SERVICE PERSONNEL.

The exclamation point within an eqilateral triangle is intended to alert the user to the presence of important operating and maintenance instructions in the literature accompanying the device.

WARNING:
THIS APPARATUS MUST BE EARTHED



4. FRONT PANEL CONTROLS

4.1 Input Gain Switch

This three position switch sets the operating level of the input preamp to +20db, +40dB, or +60dB. Best signal to noise ratio is obtained with higher gain settings. It is therefore desirable to set the gain switch as high as possible while still leaving 20dB of headroom for signal peaks. Line level inputs will likely use a setting of +20dB, while mic inputs generally require a setting of +40dB for close mic applications, and +60dB for quieter signals. If a channel's clip LED is blinking, first turn down that channel's level control. If the clip LED is still flashing, turn down the input gain.

4.2 Clip Indicator

Input Clip LEDs are peak sensitive and monitor all critical points within the input channel. The clip LED turns on whenever any portion of the audio path within the input channel reaches a level 3 dB below actual clipping. Clipping in the 1662A occurs at +23dB.

4.3 Treble and Bass Controls

These controls are used for broad EQ changes to each input channel. Channel EQ consists of a high shelf control (treble) at 8KHz, and a 90Hz low shelf control (bass). EQ boost or cut is ±12dB at these frequencies.

4.4 Input Assign Switch

This switch selects the output routing for each input channel. Each input can be routed to Output A, B, or both.

4.5 Input Level Control

This knob adjusts the level of each channel. If a channel's level control is always turned up to 9 or more, try increasing the gain first. Conversely, if the level control is consistently turned down to 1 or less, decrease the gain setting first. Remember that the gain setting should be set as high as possible while still allowing 20dB of headroom.

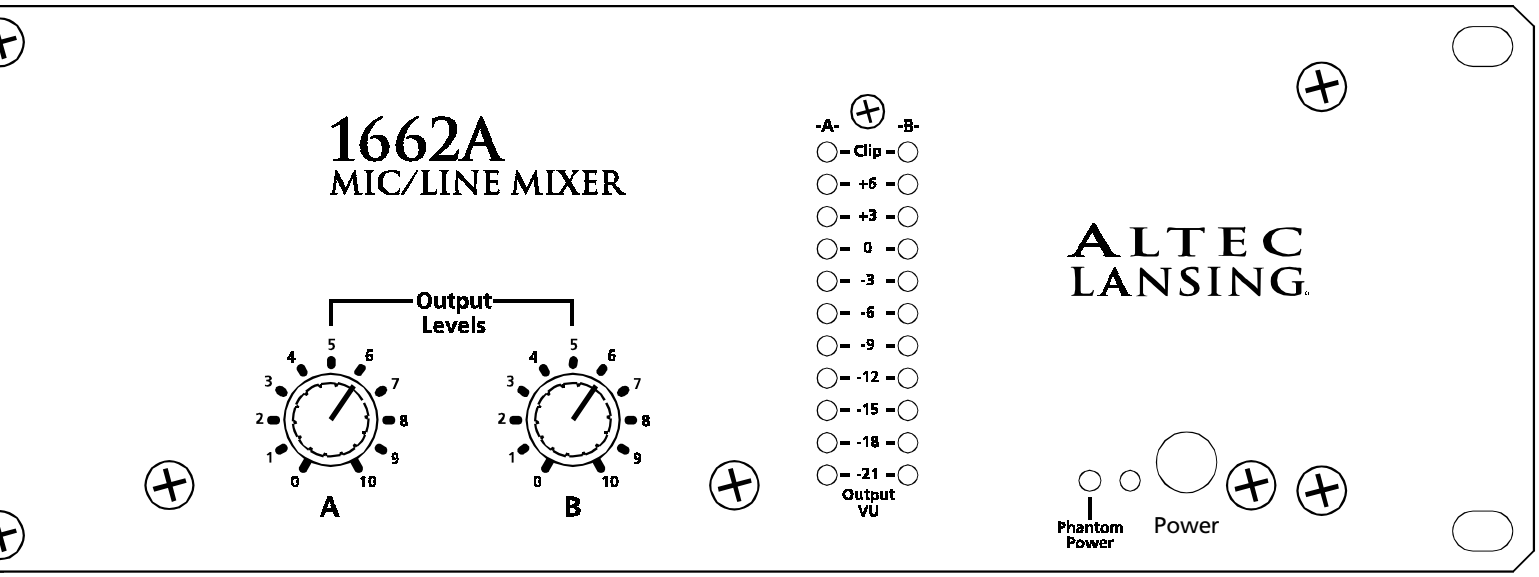
4.6 Output Level Controls

These two controls determine the signal level to the "A" and "B" outputs. They are used to drive power amplifiers for the main loudspeakers, or to connect to a stereo recording device.

4.7 Output Meters

A pair of peak reading 11 segment LED meters are used to indicate stereo output level in VU. 0 VU is equivalent to +4 dBu (1.228Vrms).

Green LED's are used below 0 VU, yellow above 0 VU and two red LED's indicate clipping. The clip LED's turn on 3dB below actual



clipping, detecting excessive signal level on any critical audio path within the master section. If all outputs are turned down and there is still clipping, then one or more inputs needs to be turned down.

4.8 Phantom Power LED

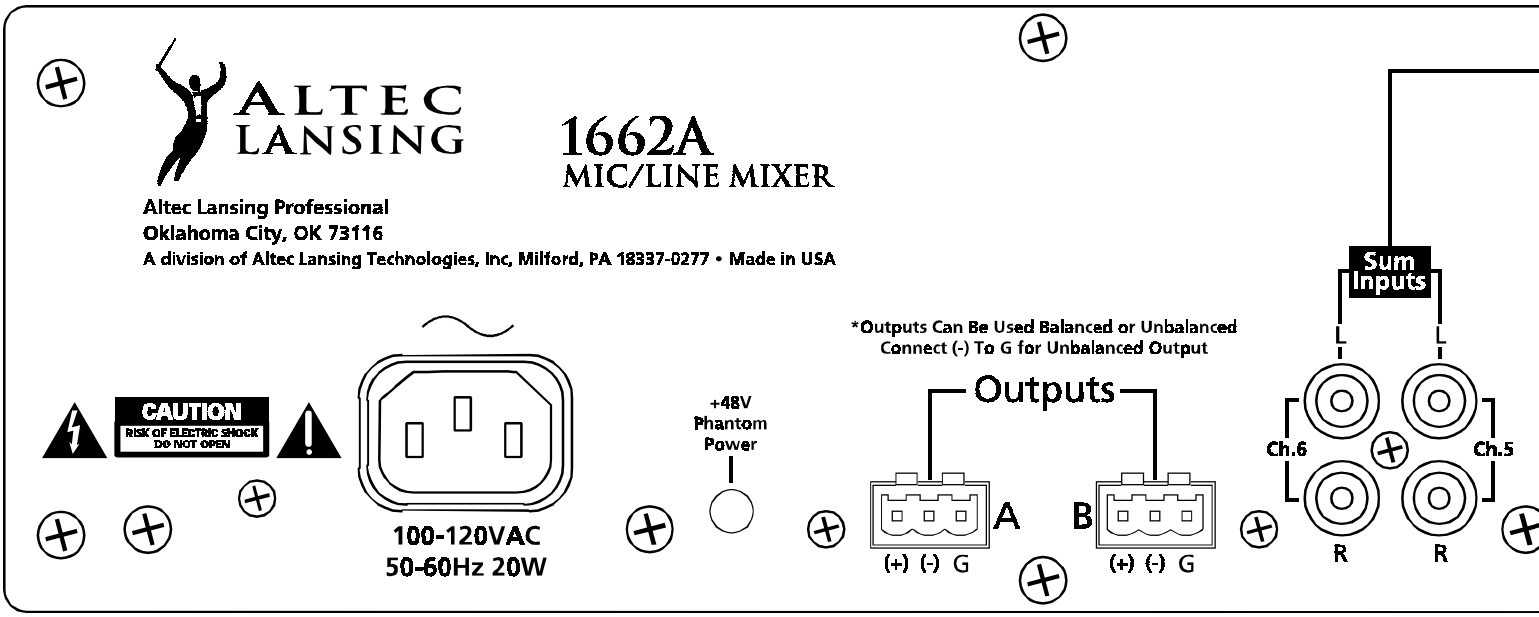
The phantom power switch is on the back panel. When the switch is pressed in, the LED is lit and +48VDC is applied to all six mic inputs for use with condenser microphones. If there is a mix of both condenser and dynamic microphones, the phantom power will not affect the operation of the most dynamic mics. The phantom power voltage ramps up gradually to minimize any turn-on "pops".

5. CONNECTORS AND CABLES

The 1662A mixer is fitted with three types of audio connectors: 3-pin Euroblock assemblies are used for mic/line inputs and main outputs, 1/4" tip-ring-sleeve (TRS) phone jacks are used for individual channel insert points, and RCA jacks are used for sum inputs.

Two-conductor (twisted pair) shielded cable is best for all audio connections that use Euroblock assemblies. Belden No. 8412 or its equivalent is an excellent cable due to its heavy construction. This type of cable should be used for all portable applications. Snake cables containing multiple shielded pairs can be used for a permanent installation, but must be handled very carefully because the leads tend to be fragile, and a broken conductor is difficult to repair.

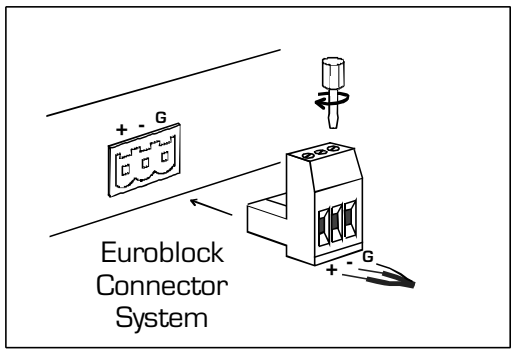
If low level and high level lines are run parallel for long distances, crosstalk may occur. In fact, the crosstalk (signal leakage between cables) can cause an electronic feedback loop, oscillation, and possibly damage to the equipment. To minimize crosstalk, physically separate low level (microphone) cables from speaker cables by the greatest feasible distance. At any point where cables meet, run low level cables perpendicular to high level or speaker cables. If low and high level or speaker cables must be run parallel and in close proximity to one another, they should be bundled separately. In a permanent installation, avoid running speaker cables and mic cable through the same conduit pipe.



6. REAR PANEL FEATURES

6.1 Microphone Input

The 1662A microphone input is an active balanced type with a nominal impedance of 1200 ohms. Its noise performance is best with a 200 ohm microphone. The mic input connector is a 3-pin Euroblock with the shield on (G), the (+) in-phase connection on (+), and the (-) out-of-phase connection on (-). If the input is unbalanced, or single ended (meaning there is only one signal wire with a shield) connect the signal wire to (+), and connect the shield to *both* (-) and (G).



6.2 Input Pad

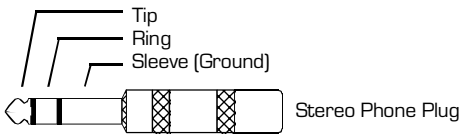
The input pad is a 20dB attenuation switch for extremely loud microphone or line level inputs. It should normally be left in the "out" position for best signal to noise ratio, but can be used when the input is being clipped with the gain and level control at minimum.

6.3 Channel TRS Insert

A 1/4" stereo phone jack insert point allows a device such as a remote level controller, graphic equalizer, noise gate, compressor/limiter, or direct out recording device to be used with one or more input channels.

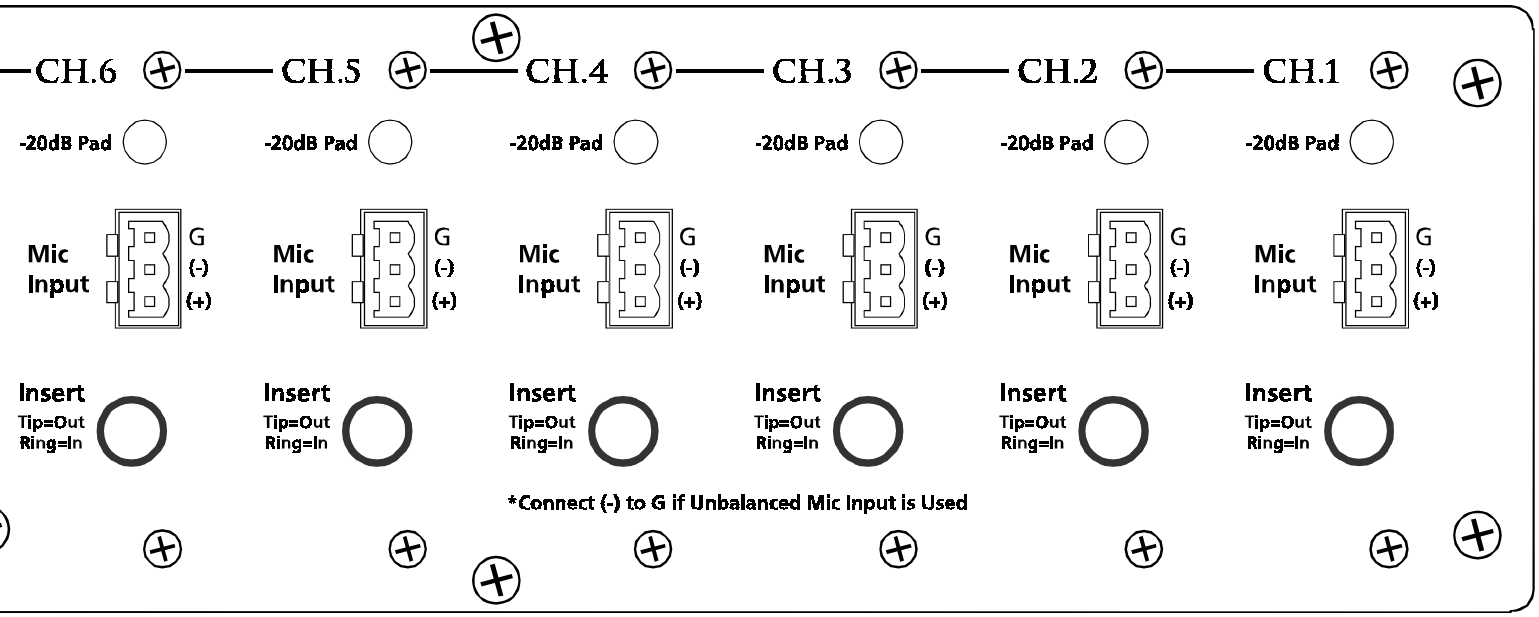
The 1662A TRS (tip-ring-sleeve) insert jacks use the tip for output and ring for the returning input. These signals will be unbalanced, so cable length should be at a minimum to maintain low noise.

To use the TRS insert as a Direct Line Output (pre EQ) for recording individual channels, make a special cable with tip and ring connected at the 1662A end and a tip-sleeve mono plug at the other end. Connecting tip and ring at the mixer insert jack is necessary for uninterrupted signal within the mixer when using direct line outputs.



6.4 Sum Inputs

The RCA sum inputs on channels five and six are typically used for auxillary audio sources such as a disc or tape player, summing a stereo source into a mono signal for each channel's input. Using the sum inputs does not prevent



the use of mic inputs on channels five or six, but only one level controls both the mic and RCA inputs. The RCA sum inputs have a nominal operating level of -10dBu to match most consumer audio sources.

6.5 Outputs

The Euroblock "A" and "B" outputs are controlled by the output level master controls. They are active servo-balanced with a nominal operating level of +4dBu into any load, and are capable of driving long lines. Outputs can be used balanced or unbalanced. For unbalanced output, connect the shield to *both* (-) and (G).

6.6 +48V Phantom Power Switch

This switch applies +48VDC to all six mic inputs for condenser microphones. Phantom power will not affect most dynamic mics, which may be used along with condenser mics.

7. TROUBLESHOOTING TIPS

7.1 No Sound

Check the AC power. Is the power switch on? Check the level meters. If they are operating, the problem is between the mixer and the later components in the system. If there is no meter activity, check to see that you really have an input signal and that it is on the desired channel.

7.2 Distorted Sound

Something is being overdriven in the signal path. If the clip indicators are active, reduce the channel gain and/or press in the pad switch on the rear panel. There are many gain adjustments in the mixer itself and probably several others in other system components which makes it possible to overdrive an input section and then incorrectly try to reduce the gain of the output section. The best way to approach setting gains is to establish the operating level of input stages first by setting their gain as high as possible but leaving about 20dB of headroom for loud peaks, then move on to set the master gain to produce a good meter reading. Proceed to set the gain of equalizers, limiters, crossovers, and amplifiers following the mixer in the same manner, always working toward the later stages of the system.

7.3 Excessive Noise

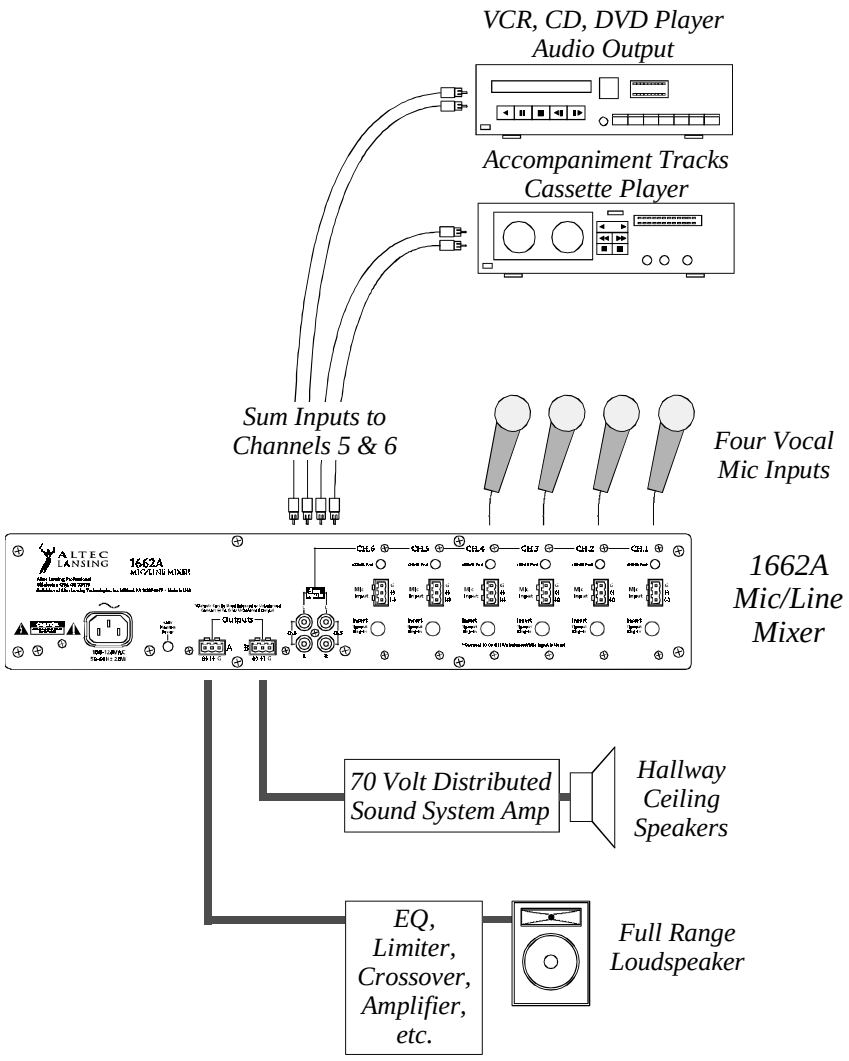
If the noise is in the form of hiss, the problem is usually due to an input stage set for insufficient gain and then compensating for it by increasing the level. Try increasing gain and reducing level. Also, check that the -20dB rear panel pad switch is not unnecessarily enabled.

7.4 Excessive hum

This is usually caused by "ground loops" in the system wiring. A complex sound system with many sources separated by significant distance and using several power outlets has many opportunities for this problem to occur. If possible, every component in the system should be plugged into the same AC circuit with a common ground. Use balanced input and output connections between widely separated components.

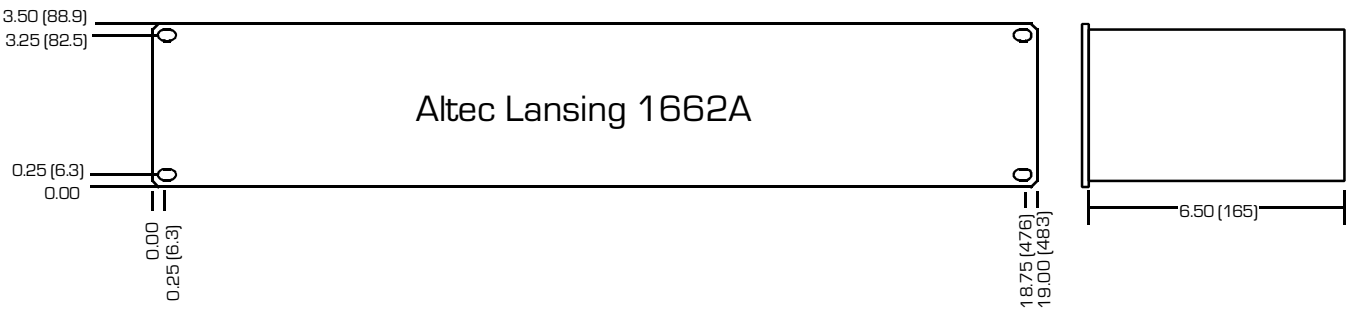
8. TYPICAL APPLICATION:

In the setup shown here, the 1662A is used to mix typical sound sources that might be found in a church, small club, gym, school theater or similar environment. Channels 1-4 are used for vocal microphones, while the remaining two channels are used for stereo program tracks. "B" output is used for main loudspeakers, and "A" output is used for speakers in another location, such as ceiling speakers in a hallway.



1662A Small Sound Reinforcement System

9. DIMENSIONS:



10. SPECIFICATIONS

DISTORTION

THD at +4 dBu, 20Hz-20KHz . . . . . <0.01%

IMD (SMPTE) at +4dBu . . . . . <0.01%

HUM & NOISE (20Hz-20KHz at max preamp gain)

Equivalent input hum and noise . . . . . <-127dBu

Residual output noise,

all levels at minimum . . . . . <-98dBu

Residual output noise, master at nominal,

all channel levels at minimum . . . . . <-95dBu

MAXIMUM VOLTAGE GAIN (±2dB)

MASTER

Mic/Line Input to Master Outputs . . . . . +84dB

Sum Input to Master Output . . . . . +24dB

MAXIMUM LEVELS

Input level, +20dB gain, pad in . . . . . +22dBu

RCA input level . . . . . +10dBu

Output level . . . . . +23dBu

FREQUENCY RESPONSE

20Hz-20KHz . . . . . +0.5/-1.0dB

EQUALIZATION (shelving)

Bass . . . . . ±12dB at 90Hz

Treble . . . . . ±12dB at 8KHz

CROSSTALK

Adjacent inputs, 20Hz-20KHz . . . . . <-70dB

VU METERS

Stereo outputs . . . . . -21 to +6 VU

0VU = +4dBu

PEAK INDICATORS

Peak Clip indicator on each input channel and left and right outputs, illuminates 3dB below clipping

PHANTOM POWER

+48 VDC applied to all Mic Inputs, switchable on rear panel. Maximum total current draw = 60mA. Maximum single channel current draw = 10mA. Gradual power-up and down to eliminate "pops".

WEIGHT

12 lbs. (5.5kg) Shipping

10 lbs. (4.5kg) Net

POWER REQUIREMENTS

120 VAC nominal, 93 VAC minimum, 50-60 Hz,

20 watts (240 VAC available)

**unless otherwise stated, specification conditions are: 150Ω source, Gain switch set at "+40", all other controls set at nominal.*

11. WARRANTY INFORMATION

The unit you have just purchased is protected by a limited five-year warranty . For warranty service or to obtain a return RMA number, please call Altec Lansing technical services at 405-848-3108. Fill out the information below for your records.

Model Number _____

Serial Number _____

Dealer _____

_____

Date of Purchase _____

Dealer's Address _____

_____

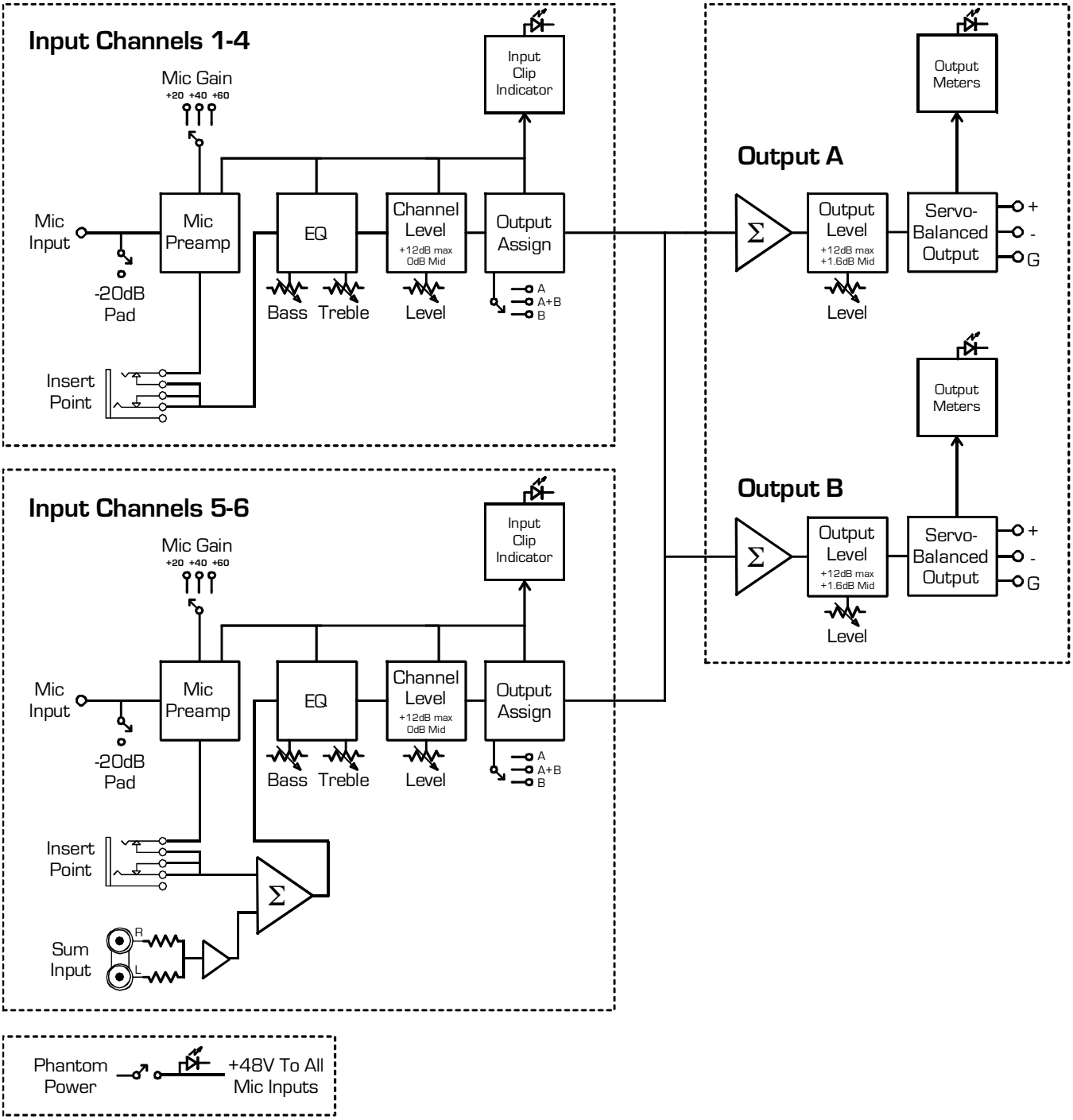
_____

Dealer's Phone _____

Salesperson _____

_____

12. 1662A Block Diagram



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